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10/616,862	07/10/2003	Bruce Gregory Warren	491442011622	1474

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EXAMINER	
HALIYUR, VENKATESH N	
ART UNIT	PAPER NUMBER
2419	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,862	WARREN ET AL.	
	Examiner	Art Unit	
	VENKATESH HALIYUR	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/01/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 (claim 7 is canceled)* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-10,12 and 13* is/are rejected.

7)☒ Claim(s) *11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 12/01/2008 has been fully considered, but is ineffective to overcome Black et al and Hoglund et al references. Rejection follows.

2. Terminal disclaimer filed by the applicant on 12/01/2008 has been disapproved due to the wrong prior patent number cited in the TD (i.e., US Pat: 7,382,760 has been cited instead of US Pat: 7,382,790). Therefore the applicant's are advised to take necessary steps to correct the TD.

3. Claims 1-13 is pending in the application. Claim 7 is canceled.

Double Patenting

4. Claims 1-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 7,382,790. Although the conflicting claims are not identical, they are not patentably distinct from each other because,

Claim 1: Claims 2,3 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices employing the Fibre Channel

Arbitrated Loop protocol including an access fairness algorithm, comprising: a plurality of Fibre Channel Arbitrated Loop ports each including port logic, a route determination apparatus, a connectivity apparatus, and logic implementing predefined loop control criteria to enforce fairness for single and multiple Loop Switch systems in addition to the access fairness algorithm by assigning different access priorities to the ports in accordance with different port types.

Claim 2: Claims 2, 3 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein the fairness logic serves to limit the number of times a connected device opens another device.

Claim 3: Claims 1, 4 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 2, wherein the fairness logic serves to limit the number of times a connected device sequentially opens another device.

Claims 4-6: Claims 3, 4 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, further including a counter to count the number of opens and wherein the counter counts sequential opens and wherein the logic proactively closes a device.

Claim 8: Claims 2, 4 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein when a port is granted a connection due to the receipt of an OPN, it is moved to the bottom of the list and the lower priority ports are moved up toward the top of the list.

Claims 9-10: Claims 2,5,6 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein the different access priorities are predefined and wherein the different access priorities include a higher level which wins loop arbitration before the lower levels.

Claims 11-12: Claims 1, 2 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 9 wherein the predefined access priorities are separate from the Fibre Channel Arbitrated Loop address priorities and wherein fairness is enforced in a string cascade architecture.

Claim 13: Claims 1-3 of U.S. Patent No. 7,382,790 disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 12 wherein the fairness is enforced in part where a device wins an arbitration when an ARB has traveled between the switch and the interconnected switches on the string.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. (US 6,614,796 B1) in view of Hoglund et al (US Pat: 6,747,984).

Regarding claim 1, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices (Fig: 2 @ N1, N2) employing the Fibre Channel Arbitrated Loop protocol (FCAL protocol, col: 3, lines: 15-20) comprising: a plurality of Fibre Channel Arbitrated Loop Ports (Fig: 4 @ 108, 110) each including port logic (col: 26, lines: 1-2 and fig: 7 @ 218, 220), a route determination apparatus (Fig: 5 @ 136), a connectivity apparatus (Fig: 4 @ 102, 104 half bridges, col: 14, line: 111-14), and logic implementing predefined loop control criteria to enforce fairness for single and multiple loop switching systems (Fig 2, col: 10, lines 3-7, col: 13, lines 16-20, Fig 17 A/B, col: 26, lines 14-20) in addition to the access fairness algorithm (all ports can access fairness token because fairness token circulates to all ports on the switch enabling a “round robin” fairness algorithm, Fig 2 , col: 7, lines 35-40, col: 8, lines 33-41, col: 17, lines: 28-35) but fails to disclose assigning different access priorities to the ports in accordance with different port types. However, Hoglund et al disclosed a method for assigning different access priorities for different ports for the data associated with each port function for a fibre channel system (col 3, lines 33-42, Fig 1, col 7, lines 32-38, Fig 6). Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of assigning different access priorities for different ports for the data associated with each port as taught by Hoglund et al in the system of Black et al. to include access fairness algorithm for single and multiple loop switch system by assigning different access priorities to the ports in accordance with different port types. One is motivated as such in order to provide improved fibre channel arbitrated loop to intelligently transfer data and manage port queues.

Regarding claim 2, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein the fairness logic serves to limit the number of times a connected device opens another device (fairness token enable bit controls to activate token, col: 38, lines: 18-26; and fairness token position counter, col: 38, lines: 33-39).

Regarding claim 3, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 2, additionally the fairness logic serves to limit the number of times a connected device sequentially opens another device (Each Port's status information about availability or busy status is saved in a local copy of scoreboard table 125 in memory, col: 14, lines: 34-35; and scoreboard controls the denial or acceptance based on scoreboard table, col: 35, lines: 21-24).

Regarding claims 4-5, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, further including a counter to count the number of opens (col: 44, lines: 34-36) and the counter counts sequential opens (col: 44, lines: 46-48).

Regarding claim 6, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein the logic proactively closes a device (when "CLS" primitive is sent, the conversation ends or closes, col: 4, lines: 10-12; and Upon receipt of "CLS" primitive for closing, source port drops the connection, col: 23, lines: 16).

Regarding claim 8, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein when a port is granted a

connection due to the receipt of an OPN, it is moved to the bottom of the list and the lower priority ports are moved up toward the top of the list (when OPN received by a port, its priority changes to “High Priority status” no matter how busy it is, col: 7, lines: 39-44).

Regarding claim 9, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein different access priorities are predefined (Fairness Token circulating to all the ports, col: 7, Each port has priority assigned, lines: 35-46, and col: 17, lines: 33-35).

Regarding claim 10, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 9 wherein the different access priorities include a higher level which wins loop arbitration before the lower levels (Each port has priority assigned, col 7, lines: 35-46, col: 9, lines: 6- 8).

Regarding claim 12, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein fairness is enforced in a string cascade (connecting o/p of a device to i/p of another device) architecture (Fig: 9 @ 255, 257; in switch mode, loop switches are connected together as shown with the state machine-LPSM).

Regarding claim 13, Black et al. disclosed a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 12 wherein the fairness is enforced in part where a device wins an arbitration when an ARB has traveled between the switch and the interconnected switches on the string (Fig: 9 and col: 41, lines: 36-37).

Response to Arguments

7. Applicant's arguments, see remarks, filed on 12/01/2008, with respect to the rejection(s) of claim(s) 1-14 under 35 U.S.C 103(a) have been fully considered but is not persuasive.

With respect to applicant's argument for claims 1-14 that that Black and Hoglund fail to teach or suggest the feature of "assigning different access priorities to the ports in accordance with different port types," such as a string cascade port, a tree cascade port or a device port", however the examiner disagrees and points applicants to the reference where Black et al disclosed different port types in (col 5, lines 19-39, col 17, lines 10-42) with different access priorities for the ports and Hoglund et al disclosed that Fibre channel arbitrated loop topology allows for multiple ports communicating with different port functionalities (col 3, lines 33-49). Therefore the references can be combined to establish obviousness type rejection by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies assigning different access priorities to the different port types, such as a string cascade port, a tree cascade port or a device port are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

specification are not read into the claims and therefore the examiner has given a broad interpretation of the claim language while rejecting the claims.

Allowable Subject Matter

8. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to teach and render obvious the feature for interconnecting Fibre Channel Arbitrated Loop Devices, wherein the predefined access priorities are separate from the Fibre Channel Arbitrated Loop address priorities.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached @ (571)-272-7884. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

/Venkatesh Haliyur/

Examiner, Art Unit 2419

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2419